

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/25/10 has been entered.

Response to Remarks

1. This Office action is considered fully responsive to the amendment filed 10/25/10.

Response to Arguments

2. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claim 12** is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant

claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The claimed method is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent.

In particular, it appears that the only machine is the mobile station, however this is what is being selected and not what is performing the method. There does not appear to be any inherent use of a machine performing the method as well, as it appears it could completely be formed mentally or verbally, as it is merely selection due to already given measurements that pertain to two channels. Thus, the method appears that it could be performed without use of a machine. There is also no transformation of any particular article.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claim 12** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is generally narrative and indefinite, failing to conform with current U.S. practice. In particular, it is not clear or specified as to what scope is being claimed, as it is not specified if this claim pertains to the base station and its components (as in claim 1) or the mobile station and its components (as in claim 8) or both.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over by U.S. Publication No. 2005/0181811 A1 to *Magnusson et al. ("Magnusson")* in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and in further view of U.S. Publication No. 2005/0083998 A1 to *Li et al. ("Li")*.

As to **claim 1**, *Magnusson* discloses a base station apparatus (para. 0032, fig. 1, 104) comprising:

a selection section (para. 0033, feedback information processor 216 of base station 104) that selects, from among a plurality of mobile stations, a mobile station to which a data channel is assigned (para. 0032-0033, fig. 1, fig. 9a, para. 0048, multiple UEs, BS 104 selecting (by feedback information processor) which UE 102 to send data to, communication occurs over HS-DSCH (data channel)), the selection of the mobile station being in accordance with measured channel quality (para. 0032, selection of UE is based upon reported CQI information to the base station, CQI pertains to measured channel conditions); and

a transmitting section that performs radio transmission of data to a selected mobile station (para. 0032, fig. 2b, item 3026, transmitter, selected UE has data transmitted to it).

Magnusson does not expressly disclose both measured channel quality of a control channel for transmitting control information which includes assignment information of the data channel or modulation and coding scheme (MCS) information, and independently measured channel quality of the data channel.

Wintzell discloses a channel quality indicator value is determined based upon an independent measurement of a pilot control channel sending a pilot signal and an independent determination of the quality of user-data channel which is a calculation (i.e. measurement) of block errors (abstract, fig. 2, para. 0007, 0017, para. 0023).

Magnusson and *Wintzell* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the calculations as disclosed by *Wintzell* into the invention of *Magnusson*. The suggestion/motivation would have been to determine a channel quality indicator in a radio communications network (*Wintzell*, para. 0001).

Li discloses control information includes a modulation scheme and recipient terminal for each HS-PDSCH (i.e. data channel) (para. 0039).

Magnusson, *Wintzell* and *Li* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the control information as disclosed by Li into the invention of *Magnusson* and *Wintzell*. The suggestion/motivation would have been to perform data demodulation in CDMA (Li, para. 0002).

As to **claim 12**, *Magnusson* discloses a data channel assignment method whereby a mobile station to which a data channel is assigned is selected from among a plurality of mobile stations (para. 0032, fig. 1, fig. 9a, para. 0048, multiple UEs, BS 104 selecting which UE 102 to send data to, communication occurs over HS-DSCH (data channel), the selection of the mobile station being in accordance with measured channel quality (para. 0032, selection of UE is based upon reported CQI information to the base station, CQI pertains to measured channel conditions).

Magnusson does not expressly disclose both measured channel quality of a control channel for transmitting control information which includes assignment information of the data channel or modulation and coding scheme (MCS) information, and independently measured channel quality of the data channel.

Wintzell discloses a channel quality indicator value is determined based upon an independent measurement of a pilot control channel sending a pilot signal and an independent determination of the quality of user-data channel which is a calculation (i.e. measurement) of block errors (abstract, fig. 2, para. 0007, 0017, para. 0023).

Magnusson and *Wintzell* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the calculations as disclosed by Wintzell into the invention of Magnusson. The suggestion/motivation would have been to determine a channel quality indicator in a radio communications network (Wintzell, para. 0001).

Li discloses control information includes a modulation scheme and recipient terminal for each HS-PDSCH (i.e. data channel) (para. 0039).

Magnusson, *Wintzell* and *Li* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the control information as disclosed by *Li* into the invention of *Magnusson* and *Wintzell*. The suggestion/motivation would have been to perform data demodulation in CDMA (*Li*, para. 0002).

9. **Claims 2, 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2005/0181811 A1 to *Magnusson et al.* ("*Magnusson*") in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2003/0073409 A1 to *Nobukiyo et al.* ("*Nobukiyo*").

As to claim 2, *Magnusson*, *Wintzell* and *Li* does not expressly disclose the base station apparatus according to claim 1, wherein the selection section selects the mobile station for which the channel quality of the control channel is greater than or equal to a

threshold value set according to a total number of mobile stations currently accommodated by the base station apparatus.

Nobukiyo discloses in paras. 0131, 0154-0159, figs. 21 and 22, a mobile station transmits quality information after setting a control channel with the base station. The mobile station transmits this information if it has a reception quality greater than or equal to threshold "P". Threshold "P" is set based on a value "N" corresponding to the number of mobile stations which report reception quality.

Magnusson, Wintzell, Li and *Nobukiyo* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the threshold value and quality reporting as disclosed by *Nobukiyo* into the invention of *Magnusson, Wintzell* and *Li*. The suggestion/motivation would have been to extend battery life and improve high speed packet transmission service with low error ratio (*Nobukiyo*, paras. 0154-0159).

As to claim 6, *Magnusson, Wintzell* and *Li* further discloses the base station apparatus according to claim 1, wherein the selection section selects the mobile station to which the data channel is assigned, in accordance with channel quality of a control channel (*Magnusson*, para. 0032, selection of UE is based upon reported CQI information to the base station, CQI pertains to measured channel conditions; *Wintzell*, a channel quality indicator value is determined based upon an independent measurement of a pilot control channel sending a pilot signal and an independent determination of the quality of user-data channel which is a calculation (i.e.

measurement) of block errors (abstract, fig. 2, para. 0007, 0017, para. 0023)) in accordance with channel quality of an uplink channel for transmitting an acknowledgement (ACK) or a negative acknowledgement (NACK) (Magnusson, para. 0041, feedback information includes an ACK, NACK, a CQI, BLER).

Magnusson, Wintzell and Li does not expressly disclose in accordance with channel quality of *an uplink control channel*.

Nobukiyo discloses UL HS-DPCCH transmits ACK/NAKs and quality information to the base station by the mobile station (para. 0005).

Magnusson, Wintzell, Li and *Nobukiyo* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the UL HS-DPCCH quality information as disclosed by *Nobukiyo* into the invention of *Magnusson, Wintzell and Li*. The suggestion/motivation would have been to have a BS and MS suitable for use in a HSDPA system (*Nobukiyo*, para. 0002).

10. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2005/0181811 A1 to *Magnusson et al.* ("*Magnusson*") in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2004/0066754 A1 to *Hottinen et al.* ("*Hottinen*").

As to claim 3, *Magnusson, Wintzell and Li* do not expressly disclose the base station apparatus according to claim 1, wherein the selection section selects a number

of mobile stations in high-to-low order of the channel quality of the control channel, and the number of selected mobile stations is set according to a total number of mobile stations currently accommodated by the base station apparatus.

Hottinen discloses channel information for mobile stations that are in simultaneous connection with a base station 2 is fed back to the base station 2 over a control channel. Furthermore, based upon this information, the channel allocator differentiates between poor and good signal quality. Based upon this, a good quality mobile station is given a channel connection, and a poor quality mobile station is not given a channel connection, but is instead allocated this at a later time (para. 0044-0046).

Magnusson, Wintzell, Li and Hottinen are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the selection method as disclosed by *Hottinen* into the invention of *Magnusson, Wintzell and Li*. The suggestion/motivation would have been to maximize throughput or transmit efficiency (*Hottinen*, para. 0044-0046).

11. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2005/0181811 A1 to *Magnusson et al.* ("*Magnusson*") in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Patent No. 6,735,178 B1 to *Srivastava et al.* ("*Srivastava*").

As to claim 4, *Magnusson*, *Wintzell* and *Li* does not expressly disclose the base station apparatus according to claim 1, wherein the selection section performs selection in accordance with the channel quality of the data channel after performing selection in accordance with the channel quality of the control channel.

Srivastava discloses in fig. 2, col. 3, lines 14-20, measuring quality to destinations, and collecting latency information. After that, discarding bad links from consideration, and from the remaining links, calculating quality of throughput and selecting destination with highest quality throughput, i.e. selecting based on quality of one link factor first then, then selecting a destination based on quality of a different link factor from the remaining pool of destinations.

Magnusson, *Wintzell*, *Li* and *Srivastava* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate selection method as disclosed by *Srivastava* into the invention of *Magnusson*, *Wintzell* and *Li*. The suggestion/motivation would have been to maximize data throughput of a multiple radio system (*Srivastava*, col. 1, lines 6-9).

12. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2005/0181811 A1 to *Magnusson et al.* ("*Magnusson*") in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2004/0162073 A1 to *Yoneyama et al.* ("*Yoneyama*").

As to claim 5, *Magnusson*, *Wintzell* and *Li* do not expressly disclose the base station apparatus according to claim 1, wherein the base station accommodates communications with a plurality of mobile stations and a plurality of corresponding control channels, and

the selection section selects the mobile station to which the data channel is assigned, in accordance with the channel quality of the control channel corresponding to the selected mobile station, wherein the control channel is a downlink individual channel.

Yoneyama discloses a mobile station selects one of a plurality of base stations with corresponding control channels based on the electric field strength of the control channels, i.e. and each control channel is a downlink individual channel as data transmitted from it is "downlink" and each control channel corresponds to one base station (abstract, para. 0002, 0018)—i.e. in this case the claimed base station is taken to be the "mobile station" and the claimed mobile stations are taken to be the "base stations" as the names of the nodes are not the concern rather the functionality performed by them.

Magnusson, *Wintzell*, *Li* and *Yoneyama* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate selection method as disclosed by *Yoneyama* into the invention of *Magnusson*, *Wintzell* and *Li*. The suggestion/motivation would have been to provide a mobile station that is surely assigned a traffic channel having an electric field strength

at which transmission errors will rarely occur, and a base station for the mobile station (Yoneyama, para. 0017).

13. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2005/0181811 A1 to *Magnusson et al.* ("*Magnusson*") in view of U.S. Publication No. 2005/0003782 A1 to *Wintzell* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2002/0126645 A1 to *Ryu*.

As to claim 7, *Magnusson*, *Wintzell* and *Li* discloses the base station apparatus according to claim 1, wherein the selection section performs selection in accordance with both the channel quality of the control channel and the channel quality of the data channel only if the mobile station is within an area covered by the base station (*Magnusson*, fig. 1, Base station transmits to UEs within a particular area).

Magnusson, *Wintzell* and *Li* do not expressly disclose the mobile station has a distance from the base station greater than or equal to a predetermined value.

Ryu discloses if the distance value received by the mobile station 100 is within the range presented by the base station A 106, the mobile station 100 can receive the broadcasting (fig. 10, para. 0053), i.e. value within range (min<value<max is a range where the value is greater than the minimum value in the range).

Magnusson, *Wintzell*, *Li* and *Ryu* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the distance value as disclosed by *Ryu* into the invention of *Magnusson*, *Wintzell* and *Li*. The suggestion/motivation would have been so that the

mobile station can receive broadcasting if the value is within a range (Ryu, fig. 10, para. 0053).

14. **Claims 8, 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2002/0136271 A1 to *Hiramatsu et al.* ("*Hiramatsu*") in view of U.S. Patent No. 5,991,285 to *Ghosh* and in further view of U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*").

As to **claim 8**, *Hiramatsu* discloses a mobile station apparatus (fig. 14, para.0003-0004, 0134-0142, communication terminal) comprising:

a first estimating section that estimates a channel quality of a control channel for receiving control information (fig. 14, para.0003-0004, 0134-0142, a measuring section 1202 for measuring SIR of a CPICH (control channel) signal (control information));

a second estimating section that independently estimates a channel quality of the data channel (fig. 14, para.0003-0004, 0134-0142, a SIR estimation section 1205 estimates reception quality for a DSCH (data channel) signal);

a generation section that generates channel quality information from the estimated channel quality of the data channel (fig. 14, para.0003-0004, 0134-0142, MCS1 decision section decides on MCS applicable to reception quality of DSCH signal and generates MCS1);

a determination section that determines, in accordance with the estimated channel quality of the control channel, whether or not the channel quality information of the data channel is to be transmitted (fig. 14, para.0003-0004, 0134-0142, multiplexing

section 1208 generates a multiplexed signal including MCS1 to be transmitted to base station, i.e. determines affirmatively).

Hiramatsu does not expressly disclose, a first *measuring* section that *measures*, control channel *for receiving control information including assignment information of a data channel or modulation and coding scheme (MCS) information*, a second *measuring* section that independently *measures*, from the *measured* channel quality, in accordance with the *measured* channel quality.

Ghosh col. 1, lines 20-34, mobile station transmits power control data bit (i.e. generated channel quality information) based on result of both control and communication (i.e. data) channels' measured SIRs.

Hiramatsu and *Ghosh* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the measured SIRs as disclosed by *Ghosh* into the invention of *Hiramatsu*. The suggestion/motivation would have been to transmit a power control data bit based on the SIR results (*Ghosh*, col. 1, lines 20-34).

Li discloses control information includes a modulation scheme and recipient terminal for each HS-PDSCH (i.e. data channel) (para. 0039).

Hiramatsu, *Ghosh*, and *Li* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the control information as disclosed by *Li* into the invention of

Hiramatsu and Ghosh. The suggestion/motivation would have been to perform data demodulation in CDMA (Li, para. 0002).

As to claim 10, *Hiramatsu*, *Ghosh*, and *Li* further disclose the mobile station apparatus according to claim 8, wherein the first measuring section measures the channel quality using a reception signal-to-interference ratio (SIR) of the control channel (Ghosh, a mobile station measures a signal-to-interference ratio of a code-demultiplexed control channel (col. 1, lines 20-34)). In addition, the same suggestion/motivation of claim 8 applies.

15. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2002/0136271 A1 to *Hiramatsu et al.* ("*Hiramatsu*") in view of U.S. Patent No. 5,991,285 to *Ghosh* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2003/0073409 A1 to *Nobukiyo et al.* ("*Nobukiyo*").

As to claim 9, *Hiramatsu*, *Ghosh*, and *Li* do not expressly disclose the mobile station apparatus according to claim 8, wherein the determination section determines that the channel quality information is to be transmitted when the channel quality of the control channel is greater than or equal to a threshold value, and determines that the channel quality information is not to be transmitted when the channel quality of the control channel is less than the threshold value.

Nobukiyo discloses a mobile communication system in which the quality information of a control channel is reported when the reception quality of the mobile station is greater than or equal to the threshold value (paras. 0131, para. 0155).

Hiramatsu, Ghosh, Li, and Nobukiyo are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the threshold value and quality reporting as disclosed by *Nobukiyo* into the invention of *Hiramatsu, Ghosh, and Li*. The suggestion/motivation would have been to extend battery life and improve high speed packet transmission service with low error ratio (*Nobukiyo*, para. 0154-0155).

16. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. 2002/0136271 A1 to *Hiramatsu et al.* ("*Hiramatsu*") in view of U.S. Patent No. 5,991,285 to *Ghosh* and U.S. Publication No. 2005/0083998 A1 to *Li et al.* ("*Li*") and in further view of U.S. Publication No. 2005/0037766 A1 to *Hans et al.* ("*Hans*").

As to claim 11, *Hiramatsu, Ghosh, and Li* does not expressly disclose the mobile station apparatus according to claim 8, wherein the first measuring section measures the channel quality using required transmission power of the control channel.

Hans discloses channel measurement arrangement 10 selects the transmission channel that has the minimum transmission power and causes channel assignment arrangement 20 to subsequently use this transmission channel for first connection 41 instead of the corresponding transmission channel measured by connection quality

arrangement 40, which has too low a connection quality (para. 0025), i.e. channel power measured for quality purposes, selecting the channel with minimum transmission power.

Hiramatsu, Ghosh, Li and *Hans* are analogous art because they are from the same field of endeavor regarding data communications.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the transmission power measurements as disclosed by *Hans* into the invention of *Hiramatsu, Ghosh, and Li*. The suggestion/motivation would have been to select a channel to use based on quality (*Hans*, para. 0025).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR GHOWRWAL whose telephone number is (571)270-5691. The examiner can normally be reached on M-Th 10a.m.-8:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on (571)272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OMAR GHOWRWAL/
Examiner, Art Unit 2463